WHAT IS CLAIMED IS:

1. A system for liquefaction monitoring of a gas characterized by an operating temperature and an operating pressure in a gas piping system, comprising:

means for providing at least two parameters of said gas;

means for providing at least one reference data sets of said gas, said at least one reference data sets containing data pairs of temperatures and pressures;

means for determining a liquefaction status of said gas based on said two parameters and said at least one reference data set; and

means for reporting said liquefaction status.

2. The system of claim 1, wherein one of said at least two parameters is correlated to said operating temperature and another one of said at least two parameters is correlated to said operating pressure of said gas.

3. The system of claim 1, wherein said means for providing at least two parameters comprises at least one sensor selected from the group consisting of a temperature sensor and a pressure sensor.

4. The system of claim 1, wherein said at least two parameters are said operating temperature and said operating pressure of said gas measured respectively by a temperature sensor and a pressure sensor.

5. The system of claim 1, wherein said at least one reference data sets contains data pairs of temperatures and corresponding saturated vapor pressures of said gas.

6. The system of claim 1, wherein said at least one reference data sets consists of three reference data sets, said three reference data sets giving rise respectively to three liquefaction tolerance levels, and one of said three reference data sets contains saturated data for said gas product.

7. The system of claim 6, wherein said means for determining said liquefaction status is a tolerance-level-determination engine that compares at least one of said operating temperature and said operating pressure of said gas with at least one of said three liquefaction tolerance levels to determine said liquefaction status.

8. The system of claim 7, wherein said means for reporting said liquefaction status of said gas is a results-reporting engine that reports said liquefaction status, and further calculates and reports at least one of a pressure liquefaction margin and a temperature liquefaction margin for said gas.

9. A system for liquefaction monitoring of a gas product in a gas piping system, comprising:

at least one sensor selected from the group consisting of temperature and pressure sensors for monitoring said gas product;

a tolerance-level-determination engine adapted for determining a liquefaction status of said gas product using data from said at least one sensor; and

a results-reporting engine operatively connected to said tolerance-level-determination engine for reporting said liquefaction status.

10. The system of claim 9, wherein said tolerance-level-determination engine is adapted to receive two input parameters that are correlated respectively with an operating temperature and an operating pressure of said gas product; one of said two input parameters being provided by said at least one sensor; and said liquefaction status is determined by comparing data derived from said two input parameters and said one or more reference data sets comprising saturated temperature and vapor data for said product gas.

11. The system of claim 10, further comprising a compensation circuit selected from the group of a temperature compensation circuit and a pressure compensation circuit.

12. The system of claim 9, wherein said system is connected to said gas piping system by a connection selected from the group consisting of a dead-ended connection and a flow-through connection.

13. The system of claim 9, wherein said tolerance-level-determination engine comprises at least one of means for phase determination, means for data comparison and means for data storage.

14. The system of claim 9, wherein said results-reporting engine comprises at least one of means for pressure liquefaction margin determination and means for temperature liquefaction margin determination.

15. The system of claim 9, wherein said at least one sensor and said engines are enclosed within a single housing.

16. A system for use on a gas piping system having a pressure transducer comprising:

a tolerance-level-determination engine operatively connected to said pressure transducer, and adapted to determine a liquefaction status of a gas in said gas piping system;

a temperature data collector connected to said tolerance-level-determination engine;

a results-reporting engine operatively connected to said tolerance-level-determination engine;

at least one indicator operatively connected to said results-reporting engine and adapted to indicate a liquefaction status of a gas product.

17. The system of claim 16 further comprising a housing for holding said tolerance-level-determination engine and said results-reporting engine, said housing being adapted to mount onto said gas piping system proximate to said pressure transducer.

18. A system for use on a gas piping system containing a gas product, said system comprising:

sensors adapted to monitor a pressure and a temperature of said gas product;

a tolerance-level-determination engine adapted for liquefaction monitoring using data from said temperature and pressure sensors;

a results reporting-engine operatively connected to said tolerance-level-determination engine;

a housing enclosing said tolerance-level-determination engine and said results reporting engine;

said housing being removably connected to said gas piping system; and

at least one indicator connected to said results-reporting engine.

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19. The system of claim 18 wherein said tolerance-level-determination engine includes means for adapting tolerance-levels to different gas products.

20. The system of claim 18 wherein said housing is selectively movable along said gas-piping system.

21. The system of claim 18 wherein:

said housing, sensors and results-reporting engine form a unit;

said system including a plurality of units operatively positioned along said gas piping system, a communications network having a monitoring station, said monitoring station including means for monitoring said units.

22. A method for determining liquefaction of a gas product in a gas piping system using a data collector, said method comprising the steps of:

gathering data from said gas product selected from the group consisting of pressure and temperature data; and

determining a liquefaction status from said gathered data.

23. The method of claim 22 further comprising the step of indicating said liquefaction tolerance level.

24. The method of claim 23 wherein said indicating step includes one of delivering said indication remotely from said gas piping system and delivering said indication at a location proximate to said gas piping system.

25. The method of claim 22 wherein said determining step includes providing information corresponding to saturated properties of said gas product.

26. The method of claim 25 wherein said determining step further includes comparing said gathered data to saturated property information.

27. A method for liquefaction monitoring of a gas in a piping system, comprising:

providing at least two parameters of said gas, said at least two parameters being correlated respectively to an operating pressure and an operating temperature of said gas;

providing at least one reference data set for said gas, said at least one reference data set containing data pairs of temperatures and pressures;

determining a liquefaction status of said gas based on a comparison of said at least two parameters and said at least one reference data set; and

reporting said liquefaction status for said gas.